- PATENT -

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Yepez III et al.	EXAMINER:	S. Blount
SERIAL NO.:	10/082,483	GROUP:	2616
FILED:	February 25, 2002	CASE NO.:	CE08711I

ENTITLED: APPARATUS AND METHOD FOR DE-PRIORITIZATION OF BYPASS PACKETS IN A PACKET BASED COMMUNICATION SYSTEM

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January 18, 2007

Mail Stop APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
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APPEAL BRIEF

Commissioner:

Pursuant to 37 C.F.R. §41.37, the appellants hereby respectfully submit the following Brief in support of their appeal.

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(1) Real Party in Interest

The real party in interest is Motorola, Inc.

(2) Related Appeals and Interferences

There are no related appeals or interferences known to appellant, the appellant's legal representative, or assignee that will directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

Claims 21, 22, 24 and 25 are pending and presently stand twice and finally rejected and constitute the subject matter of this appeal. Claims 1-20, 23 and 26-29 are canceled.

(4) Status of Amendments

An Amendment was filed after the Final Rejection mailed on November 14, 2006. The Advisory Action of December 8, 2006, indicates that this Amendment was considered and entered. The claims as thus amended are included in the Claims Appendix attached hereto.

(5) Summary of Claimed Subject Matter

Claim 21 provides a communications apparatus that includes a communication network configured to handle packet-based traffic (e.g., 13), a voice processor (e.g., 32) coupled to the communication network, and a control processor (e.g., 30) configured to assign a queue priority to a communication signal, in transit between the communication network and the voice processor. The queue priority is determined at least in part according to whether the communication signal is a standard call mode or a bypass call mode. (page 3, lines 3-16; page 4, line 15- page 5, line 9) The standard call mode includes communication signals that are either decoded or encoded by a transcoder, and the bypass call mode includes communication signals that are neither encoded nor decoded by the transcoder.

(6) Grounds of Rejection to be Reviewed on Appeal

Claims 21, 22, 24 and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants Admitted Prior Art (AAPA) in view of Galyas (WO 00/42789). The appellants dispute these rejections.

(7) Argument

Rejections under 35 U.S.C. §112, first paragraph

None.

Rejections under 35 U.S.C. §112, second paragraph

None.

Rejections under 35 U.S.C. §102

None.

Rejections under 35 U.S.C. §103

Group 1 – Claims 21, 22, 24 and 25

Claim 21 provides (underlined language being relevant to the argument presented below):

21. A communications apparatus comprising:

a communication network configured to handle packet-based traffic;

a voice processor coupled to the communication network;

a control processor configured to assign a queue priority to a communication signal, the communication signal in transit between the communication network and the voice processor, wherein the queue priority is determined at least in part according to whether the communication signal is a standard call mode or a bypass call mode, wherein the standard call mode comprises communication signals that are either decoded or encoded by a transcoder and the bypass call mode comprises communication signals that are neither encoded nor decoded by the transcoder.

In the Final Office Action mailed 6/29/06 (hereinafter "FOA"), the Examiner cites the Applicants Admitted Prior Art (AAPA) in view of Galyas (WO 00/42789) as teaching the language of claim 21. In the *Response to Arguments* section of the FOA, the Examiner asserts that the problem in both the present application and in Galyas is "delay due to traffic type" and

the solution in both is queue prioritization. The Examiner further asserts that the problems are similar enough that one of ordinary skill in the art would recognize the application of Galyas and would not hesitate to use it to solve the problem faced in the admitted prior art. The Appellants respectfully disagree with this characterization of the prior art relative to the present application and submit that it oversimplifies or ignores the substantial differences between the prior art and what is claimed.

The Appellants submit that Galyas teaches the use of queue prioritization in order to differentiate between delay-sensitive traffic and traffic with less strict delay requirements, such as between speech and non-transparent data. See the quote below of Galyas page 5, lines 5-24. Galyas even teaches a hierarchy of priority levels among speech traffic, such as between interactive speech and non-interactive speech. See the quote below of Galyas page 9, lines 3-10 and of Galyas page 10, line 18 – page 11, line 14. Thus, the Appellants submit that Galyas teaches the use of queue prioritization in order to differentiate between types of traffic content that have different delay-sensitivity. In other words, Galyas suggests that a traffic's content-type can determine its queue prioritization.

In contrast, the present application describes queue prioritization that is not dependent upon a traffic's content-type. In other words, the traffic for two calls of the same type (say both are interactive speech calls with the same level of delay sensitivity, e.g.) may be assigned different queue priorities according to the present application based on how the calls are processed by a transcoder supporting each call. Thus, queue prioritization is based on how the communications apparatus processes each call rather than on the content-type of the call. For example, a first call in which communication signals are either decoded or encoded by a transcoder are assigned a first queue priority while a second call in which communication signals are neither decoded or encoded by the transcoder are assigned a second, and perhaps different, queue priority. The Appellants submit that this is neither taught nor suggested by Galyas as cited by the Examiner.

In particular, independent claim 21 as amended recites (emphasis added) "wherein the queue priority is determined at least in part according to **whether the communication signal is a standard call mode or a bypass call mode**, wherein the standard call mode comprises communication signals that are either decoded or encoded by a transcoder and the bypass call mode comprises communication signals that are neither encoded nor decoded by the transcoder."

In the rejection of claim 21, the Examiner cites various portions of Galyas including page 2, lines 17+, page 5 lines 12+, page 5 lines 15+, page 10 lines 21+, and page 9 lines 4+. Galyas page 2, lines 12-28 reads (emphasis added):

> In one exemplary embodiment, information transmitted in time slots (TSs) from mobile stations (MSs) to a base transceiver station (BTS) are received and decoded in transceivers (TRXs). The TRXs for-mat the information into IP packets and send them to an internal router. The internal router receives the packets and stores them in memory. **Each packet includes a priority level indication that is analyzed at the router. Packets with a lower priority level (e.g., corresponding to non-interactive speech) are delayed while packets with a higher priority level (e.g., corresponding to interactive speech) are forwarded without such delay**.
>
> **Interactive speech includes, for example, verbal conversations between two people in real time**. **Examples of non-interactive speech include voice mail, computer-generated menus, e-mail to/from speech, etc**. In one particular embodiment, the priority level indication analysis and forwarding in accordance with the present invention is used in conjunction with tandem free operation (TFO) of speech codecs in a GSM system. Specifically, the system identification block of TFO request and acknowledgment messages may be populated with the priority level indication. The TFO functionality of the network may therefore detect the "system" identifier to be a priority level indication and handle the packets accordingly.

Galyas page 5, lines 5-24 reads (emphasis added):

> The BSS (of which the BTS 110 may form all or a part) may be altered to accommodate packet switched transmission. Implementing packet switched transmission within the BSS increases the flexibility and the transmission efficiency when using statistical multiplexing. IP may be utilized, and priority bits in an IP header may be used to introduce QoS in an IP network. When introducing packet- based transmission into a GSM BSS, the delay requirements of GSM should met. Currently, **speech information is the most delay sensitive traffic**, and **the present invention therefore advantageously places speech into the highest delay priority class** in one exemplary embodiment. **Other services/information, which do not demand as strict delay requirements (e.g., non-transparent data), are placed into lower priority classes** that have variable delay by default.
>
> The improvement with the usage of different delay priorities, however, will be limited because the transmitted traffic is currently dominated by speech and is likely to continue to be so for a long time. The improvement derived from statistical multiplexing is then limited to the statistics of the speech sources within the network alone, and no additional improvement from different priority levels is achieved (apart from the signaling, which only needs a very low part of the bandwidth in any event). The use of statistical

multiplexing of speech is enabled by the implementation of a Voice Activity Detection/Discontinuous Transmission (VAD/DTX) mechanism, which is already implemented in GSM systems.

Galyas page 9, lines 3-10 reads (emphasis added):

According to the present invention, these different types of calls are identified. After identification, **the different types may be assigned differing levels of priority** and subsequently queued so that they may be forwarded at different times. For example, **calls identified as containing non-interactive speech are placed in a lower delay priority class**. Consequently, the available links (e.g., the Abis interface 230) may be better utilized. This increased utilization may be capitalized in a number of ways. For example, it may result in needing a lower bandwidth on the links for a given speech delay or in providing a lower speech delay for a given bandwidth.

Galyas page 10, line 18 – page 11, line 14 reads (emphasis added):

In an alternative embodiment, the number of memories (e.g., memory queues) may be increased by providing a separate memory queue for each of the TRXs/lines 210(x)/215(x) for receiving the packets 400. In another alternative embodiment, the number of separate memory queues may be increased by providing **multiple memory queues designated for one or more particular priority levels (e.g., one for interactive speech and another one for non-interactive speech).** In yet another alternative embodiment, the number of separate memory queues may be further increased by providing multiple memory queues designated for one or more particular priority levels at each of the TRXs/lines 210(x)/215(x).

A priority analyzer 415 retrieves via a data bus 420 the priority level 402 (either alone or with other portions of a packet 400) from one of the memory locations 410(x) in the memory 410. Continuing with the example provided above with reference to FIGURE 3B, the priority analyzer 415 analyzes the priority level 402 retrieved from the memory location 410(l) and determines that it is classified as non- interactive speech (e.g., a burst received on TSO). Thus, the corresponding packet 400 is delayed. The priority analyzer 415 next retrieves via the data bus 420 the priority level 402 (either alone or with other portions of a packet 400) from the memory location 410(2) in the memory 410. The priority analyzer 415 analyzes the priority level 402 retrieved from the memory location 410(2) and determines that it is classified as interactive speech (e.g., a burst received on TS1 in the example described above with reference to FIGURE 3B). Thus, the corresponding packet 400 is appropriate for transmission. The priority analyzer 415 informs a packet transmitter 425 via a control signal/line 430 that the packet 400 in the memory location 410(2) is to be transmitted. The packet transmitter 425 retrieves the packet 400 from the memory location 410(2) via the data bus 420 and subsequently forwards the packet 400 onto the Abis interface 230. The priority analyzer continues to analyze the priority levels 402 of the packets 400 received in the memory 410 until, for

example, all the packets 400 have been analyzed, additional packets 400 are received, etc.

However, the Appellants submit that Galyas fails to teach or suggest determining a queue priority according to whether the communication signal is a standard call mode or a bypass call mode (i.e., whether the communication signal is decoded or encoded or neither encoded nor decoded). Galyas clearly provides different delay priority classification for interactive speech verses non-interactive speech. In the *Response to Arguments* section of the FOA, the Examiner asserts that Galyas is not restricted to interactive / non-interactive speech, referring to Galyas' use of "LOWER-PRIORITY." However, the Appellants submit that this misses the point. The question is on what basis does Galyas teach or suggest that priority (higher or lower priority) should be determined. As cited by the Examiner, Galyas teaches that higher or lower priority is determined by whether the traffic is speech or not (see the quotation from Galyas page 5 above) and/or whether the traffic is interactive speech verses non-interactive speech (see the quotation from Galyas page 9 above).

Furthermore, Galyas appears to teach away from determining a queue priority according to whether the communication signal is a standard call mode or a bypass call mode. For example, the present application describes voice/speech signaling being assigned a different queue priority based on whether the voice/speech signaling is associated with a standard call mode or a bypass call mode. Thus, interactive speech (a verbal conversation between two people in real time, according to Galyas page 2 above) may be assigned a different queue priority based on whether it is associated with a standard call mode or a bypass call mode. In contrast, Galyas teaches that such interactive speech would be given a higher priority (see the quotation from Galyas page 2 above) without any mention or suggestion to consider an associated standard or bypass call mode.

In the Advisory Action of 10/18/06, the Examiner refers to Galyas pp 12 and 13 as addressing the Appellants' concerns regarding encoding/non-encoding and decoding/non-decoding. However, independent claim 21 recites (emphasis added) "wherein **the queue priority is determined** at least in part according to **whether the communication signal is a standard call mode or a bypass call mode**, wherein the standard call mode comprises communication signals that are either decoded or encoded by a transcoder and the bypass call mode comprises communication signals that are neither encoded nor decoded by the transcoder." The Appellants

submit that in Galyas' discussion of tandem free operation, queue priority is not described as being based on whether the communication signal is a standard mode call or a bypass mode call. Instead, priority level in Galyas is indicated by the contents of the message itself, e.g., message block 665 and priority level indication block 685. See Galyas page 12 lines 12-22, page 13 lines 29-31, and page 14 line 16 – page 15 line 7. Thus, the Appellants submit that Galyas appears to teach away from determining a queue priority according to whether the communication signal is a standard call mode or a bypass call mode and instead teaches the use of a priority field or block within each message to indicate priority.

Since none of the references cited, either independently or in combination, teach all of the limitations of independent claim 21, or therefore, all the limitations of its dependent claims, it is asserted that neither anticipation nor a prima facie case for obviousness has been shown. Appellants submit that claims 21, 22, 24 and 25 are fully patentable over the cited references and request that the Examiner be REVERSED.

(8) Conclusion

For the above reasons, the appellants respectfully submit that the rejection of claims 21, 22, 24 and 25 under 35 U.S.C. §103(a) as being unpatentable over Applicants Admitted Prior Art (AAPA) in view of Galyas (WO 00/42789) is in error and should be reversed and the claims allowed.

Lastly, please charge any additional fees (including extension of time fees) or credit overpayment to Deposit Account No. **502117 -- Motorola, Inc**.

Respectfully submitted,
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(9) Claims Appendix

1-20. (canceled)

21. (Previously presented) A communications apparatus comprising:

a communication network configured to handle packet-based traffic;

a voice processor coupled to the communication network;

a control processor configured to assign a queue priority to a communication signal, the communication signal in transit between the communication network and the voice processor, wherein the queue priority is determined at least in part according to whether the communication signal is a standard call mode or a bypass call mode, wherein the standard call mode comprises communication signals that are either decoded or encoded by a transcoder and the bypass call mode comprises communication signals that are neither encoded nor decoded by the transcoder.

22. (Previously presented) The communication apparatus according to claim 21, wherein each of the one or more voice processors is configured to insert a control flag into a signal delivered to the control processor, where the control processor utilizes the control flag to determine whether the call is one of a standard call mode and a bypass call mode.

23. (canceled)

24. (Previously presented) The communication apparatus according to claim 21, wherein the communication signals that are either decoded or encoded by the transcoder are one of mobile-to-landline and landline-to-mobile calls and the communication signals that do not require encoding and decoding are mobile-to-mobile calls.

25. (Previously presented) The communication apparatus according to claim 21, wherein the queue priority comprises a modified FIFO queue wherein communication signals having a control flag indicating a bypass mode call are placed at the bottom of the modified FIFO queue.

26-29. (canceled)

(10) Evidence Appendix

Not applicable.

(11) Related Proceeding Appendix

Not applicable.